

## CLAIMS

What is claimed is;

1. An immunostimulating peptide having an amino acid sequence X<sub>1</sub>LYQYMDDV, wherein X<sub>1</sub> is any hydrophobic amino acid.
2. The immunostimulating peptide of claim 1, wherein the amino acid sequence is VLYQYMDDV.
3. A medicament comprising:
  - i) the immunostimulating peptide of claim 1; and,
  - ii) a pharmaceutically acceptable excipient.
4. The medicament of claim 3, further comprising an immunostimulant.
5. A method for preventing or treating an HIV-1 infection comprising administering a dose of the medicament of claim 3 in an amount effective to induce an immune response capable of preventing HIV-1 infection or reducing HIV-1 viral load in a patient.
6. The method of claim 5, wherein the patient is a human.
7. A immunostimulating peptide or protein comprising the sequence X<sub>1</sub>X<sub>2</sub>YQYMDDVX<sub>3</sub>, wherein  
X<sub>1</sub> is a sequence of amino acid residues of between 0 and 200 residues in length;  
X<sub>2</sub> is any hydrophobic amino acid; and,  
X<sub>3</sub> is a sequence of amino acid residues of between 0 and 200 residues in length.
8. A medicament comprising a vector including a nucleic acid comprising a nucleotide sequence encoding a peptide having the sequence X<sub>1</sub>LYQYMDDV, wherein X<sub>1</sub> is any hydrophobic amino acid,  
wherein introducing the medicament to a subject results in

expression of the nucleic acid, thereby inducing an immune response in the subject directed against an epitope of a product encoded by the nucleic acid.

**9.** The medicament of claim 8, wherein the vector is a virus.

**10.** A method for preventing or treating an HIV-1 infection comprising administering a dose of the medicament of claim 8 in an amount effective to induce an immune response capable of preventing HIV-1 infection or reducing HIV-1 viral load in a patient.

**11.** A method of assessing immune function or diagnosing exposure to HIV-1 for a subject, the method comprising:

i) contacting a blood sample comprising T cells obtained from the subject with a peptide having an amino acid sequence  $X_1LYQYMDDV$ , wherein  $X_1$  is any hydrophobic amino acid; and,

ii) determining an immune response of the subject's T cells to the peptide.

**12.** The method of claim 11, wherein said determining step (ii) is performed by assaying for IFN- $\gamma$  production, or lysis of cells displaying the peptide by cytotoxic T lymphocytes induced with the peptide.

**13.** A fusion molecule comprising an amino acid sequence  $X_1LYQYMDDV$ , wherein  $X_1$  is any hydrophobic amino acid.

**14.** The fusion molecule of claim 13, further comprising an amino acid sequence for an HIV-1 viral protein

**15.** The fusion molecule of claim 13, further comprising a glycolipid.

**16.** The fusion molecule of claim 13, further comprising an amino acid sequence for an immunostimulating carrier protein.

**17.** A peptide or protein comprising an amino acid sequence  $X_1LYQYMDDV$ , wherein  $X_1$  is any hydrophobic amino acid.

18. The peptide or protein of claim 17, further comprising an acetylated N-terminus.

19. The peptide or protein of claim 17, further comprising a modification to the C-terminus, the modification selected from the group consisting of amidation, esterification, and reduction of a C-terminal amino acid carboxyl group..

20. A medicament comprising a peptide of claim 1 pulsed onto dendritic cells.

21. A medicament comprising dendritic cells transduced with a vector of claim 8